## REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on April 9, 2002, and the references cited therewith.

Claim 26 is cancelled, claims 21-22, 27, 31, 38-42 are amended and claims 43-59 are added; as a result, claims 21-25, 27 and 31-59 are now pending in this application.

Claim 26 has been canceled solely to advance the prosecution of the present application, and without prejudice to its further prosecution in an appropriately filed continuing or divisional application.

The specification has been amended to correct typographical errors. No new matter has been added as a result.

The claims have been amended to define Applicant's invention with greater particularity. The amendments to the claims have support throughout the specification. No new matter has been added as a result. The amendments are made to clarify the claims and are not intended to limit the scope of equivalents to which any claim element may be entitled. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Claims 21, 31 and 38 were amended to clarify that the bleached bran product is produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran. Support for these amendments can be found on pages 15-16.

Claim 31 was further amended to recite that the bleached bran product has an L value on the Hunter scale of at least about 82. Support for this amendment can be found in the specification and in original claim 23.

Claim 22 was amended for clarification.

Claim 27 was amended to depend from claim 21 rather than canceled claim 26.

*Affirmation of Election*

Restriction to one of the following groups of claims was required:

I. Claims 1-20 and 28-30, drawn to a method of bleaching bran, classified in class 426, subclass 253.

II. Claims 21-27 and 31-37, drawn to a bleached bran product, classified in class 426, subclass 615.

III. Claims 38-39 and 40-42, drawn to a bleached bran product, classified in class 426, subclass 615.

Applicant's representative, provisionally elected, in the Response to Restriction Requirement mailed on January 4, 2002, the claims of Group II, but requested that the Examiner reconsider combining Groups II and III.

The Applicant appreciates that the Examiner now states in the Office Action mailed on April 9, 2002, that Groups II and III will be examined together. As such, Applicant will prosecute the invention of Groups I and II, claims 21-27 and 31-42.

The claims of the non-elected invention, claims 1-20 and 28-30 are hereby canceled. However, Applicant reserves the right to later file continuations or divisions having claims directed to the non-elected invention.

*§112 Rejection of the Claims*

Claim 31 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

The Examiner states that it is unclear what is meant by whole wheat flour prepared from peroxide-bleached bran. The Examiner further states that the "L" value of the flour on line 2 is not specified.

The Applicant has amended claim 31 for clarification.

Reconsideration and withdrawal of this rejection is respectfully requested.

*§102 Rejection of the Claims*

Claims 38-42 were rejected under 35 USC § 102(b) as being anticipated by Schmidt (U.S. 5,275,833).

The Examiner states that Schmidt discloses a bleached bran product that is used in various food products, and that the bran is bleached to at least off-white and white.

In contrast, claims 40-42, as amended, each recite bleached bran produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran having an antioxidant activity at least 15 to 35% higher than native bran. Claim 38, as amended, also recites a bleached bran product produced in the same manner.

Schmidt does not teach each element of the claims because it does not teach bleached bran or a bleached bran product treated with both a hydrogen peroxide solution and an aqueous alkaline solution.

Schmidt does not anticipate the claims, as amended. Applicant respectfully submits that the claims 38-42, are allowable in their present form and notification to that effect is respectfully requested.

*§103 Rejection of the Claims*

Claims 21-27 and 31-37 were rejected under 35 USC § 103(a) as being unpatentable over Schmidt.

The Examiner states that Schmidt discloses a process for removing color from brown vegetables or cereal grain or flour, and that the color is removed to a slightly colored fibrous material usable in making edible food products. The Examiner further states that the bleached product is washed dried and milled, and that the finer the grind size, the lighter will be the color of the resulting product. The Examiner continues by noting that although Schmidt does not disclose the L values, it must have at least the L value as claimed. The Examiner further states that the "Schmidt product is the same as claimed" so that it will have the same properties, including being free of hydrogen peroxide, having the same fiber content, and so forth.

Applicant respectfully submits that the Examiner has not established the *prima facie* obviousness of the present claims. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the cited

references themselves or in the knowledge generally available to an art worker, to modify the reference or to combine reference teachings so as to arrive at the claimed invention. Second, the art must provide a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. In re Ochiai, 37 USPQ2d 1127 (Fed. Cir. 1997) (When evaluating the scope of a claim, every limitation in the claim must be considered).

Schmidt does not teach or suggest the claimed invention and is certainly not the "same" product as claimed. Schmidt does not even recognize the problem solved by Applicant's invention and so cannot suggest the solution. Specifically, Schmidt is not concerned with increasing the anti-oxidant activity of the bleached bran and so does not teach or suggest the use of an alkaline treatment. (See page 15, line 26 to page 16, line 16).

In contrast, claim 21, as amended recites a bleached bran product comprising bleached bran derived from a cereal grain, the bleached bran product produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran and suitable for admixing with whole wheat flour to produce white whole wheat flour. Claim 31, as amended, recites a whole wheat flour prepared in the same manner.

The reference does not contain each and every element of Applicant's claimed invention. Applicant respectfully submits that independent claims 21 and 37, claims 22-26, which depend from claim 21 and claims 32-37, which depend from claim 31, are patentably distinct from the cited reference. Claims 21-27 and 31-37, as amended, each viewed as a whole, are not suggested by the cited reference and not obvious under 35 U.S.C. 103. Reconsideration and withdrawal of this rejection is respectfully requested as it may apply to any of the pending claims.

*Conclusion*

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((515)-233-3865) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date JUNE 28, 2002 By Barbara J Clark
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 28 day of June, 2002.

Anne M. Richards
Name

Anne M. Richards
Signature

# CLEAN VERSION OF AMENDED SPECIFICATION PARAGRAPHS

BLEACHED BRAN AND BRAN PRODUCTS AND METHODS OF PREPARATION
Applicant: Adelmo Monsalve-Gonzalez et al.
Serial No.: 09/663,914

**Amended fourth complete paragraph beginning on page 6, line 23:**

The starting material can be any type of wheat, although a whiter final product is obtained with a whiter starting material, such as a white wheat. For this reason, white wheat bran is the preferred starting material. In one embodiment, a soft white wheat is used as the starting material. In another embodiment, red wheat is used as the starting material. The wheat is cleaned and milled in any suitable manner known in the art to produce wheat bran. In one embodiment, "light" bran from winter soft white wheat is produced and used in the process. As noted above, milling does not completely separate the components. As a result, the wheat bran can contain wheat germ in amounts up to about 20 percent or more, and the starchy endosperm content can be about 15 to 30%, depending on type. Generally, higher amounts of starch require more reagents for removal, thus increasing costs.

**The third complete paragraph beginning on page 18, line 18 has been deleted (as it is a duplicate of the second complete paragraph on page 18, lines 10-17).**

Docket No. 869.02[illegible]
*WD #449001*

GMI Ref. No. GMI 5476 & 5346

**CLEAN VERSION OF PENDING CLAIMS**

BLEACHED BRAN AND BRAN PRODUCTS AND METHODS OF PREPARATION
Applicant: Adelmo Monsalve-Gonzalez et al.
Serial No.: 09/663,914

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21. (Amended) A bleached bran product comprising bleached bran derived from a cereal grain, the bleached bran product produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran and suitable for admixing with whole wheat flour to produce white whole wheat flour having an L value on the Hunter scale of at least about 82.

A2

22. (Amended) The product of claim 21 wherein about five (5)% of the bleached bran product, by weight, is added to the whole wheat flour.



23. The product of claim 21 having an L value of between about 82 and 93.

24. The product of claim 21 having a water absorption value about six times higher than native bran.

25. The product of claim 21 wherein native flavor components are reduced or deactivated.

26. (cancelled)

27. (Amended) The product of claim 21 wherein the antioxidant activity is increased due to increased availability of ferulic acid.

A3

31. (Amended) A whole wheat flour comprising a bleached bran product produced by treating bran derived from a cereal grain with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran, the whole wheat flour having an L value on the Hunter scale of at least about 82 and a dietary fiber content of about 10 to 12%.

A4

32. The whole wheat flour of claim 31 substantially free of hydrogen peroxide.

33. The whole wheat flour of claim 32 prepared from soft white wheat or hard white wheat.

34. The whole wheat flour of claim 33 prepared from light bran.

35. The whole wheat flour of claim 33 having a pH of about 6.3 to 6.7.

36. A finished baked good prepared from the whole wheat flour of claim 31.

37. The whole wheat flour of claim 31 admixed with sugar, salt, and leavening.

38. (Amended) A bleached bran product comprising bleached bran derived from a cereal grain, the bleached bran product produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran and suitable for use as an additive in foods.

A5

39. (Amended) The bleached bran product of claim 38 wherein the product is added to foods selected from the group consisting of dry mixes, ready-to-eat cereals and soy.

40. (Amended) A refrigerated uncooked or bakeable dough product comprising bleached bran, the bleached bran produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran having an antioxidant activity at least 15 to 35% higher than native bran.

41. (Amended) A ready-to-eat cereal comprising bleached bran, the bleached bran produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran having an antioxidant activity at least 15 to 35% higher than native bran.

A5

42. (Amended) A cooked cereal dough comprising bleached bran, the bleached bran produced by treating bran with a hydrogen peroxide solution and an aqueous alkaline solution, the bleached bran having an antioxidant activity at least 15 to 35% higher than native bran.

43. (New) The product of claim 21 wherein the hydrogen peroxide solution has a pH of about 6 to 7 and the aqueous alkaline solution is added in an amount sufficient to raise the pH of the native bran and hydrogen peroxide solution to about 9 to 9.5.

44. (New) The product of claim 43 wherein the hydrogen peroxide solution is an aqueous solution having a concentration of between about 6 and 40%, further wherein the hydrogen peroxide solution is added in amounts of about 1 to 20 parts of hydrogen peroxide solution to about 100 parts of native bran.

A6

45. (New) The product of claim 44 wherein the hydrogen peroxide solution and alkaline solution are heated together with the bran at a temperature of about 80 to 90 °C for about 20 to 60 minutes.

46. (New) The product of claim 44 wherein the hydrogen peroxide solution and alkaline solution are heated together with the bran under a pressure of about 103.4 to 138 kPA (15 to 20 psi) and a temperature of about 120 to 130 °C for about one (1) to five (5) minutes.

47. (New) The product of claim 44 wherein the cereal grain is selected from the group consisting of wheat, rice, barley, corn (maize), oats, triticale, amaranth, soybeans and mixtures thereof.

48. (New) The product of claim 47 wherein the cereal grain is red wheat or white wheat.

49. (New) The product of claim 48 wherein the cereal grain is a soft winter white wheat that is milled to produce a light bran.

A6

50. (New) The product of claim 21 wherein the bleached bran product is comprised of particles, each particle having a particle size of at least about 100 microns.

51. (New) A bleached bran product comprising bleached bran derived from a cereal grain, the bleached bran product produced by first treating bran with a chelating agent to produce reduced transition metal content bran, the reduced transition metal content bran further treated with a hydrogen peroxide solution and an aqueous alkaline solution to produce the bleached bran product having an antioxidant activity at least 15 to 35% higher than native bran.

52. (New) The product of claim 51 wherein the chelating agent is selected from the group consisting of orthophosphate, metaphosphate, pyrophosphate, polyphosphate, calcium EDTA and sodium EDTA.

53. (New) The product of claim 52 wherein the chelating agent is calcium EDTA or sodium EDTA in a concentration of between about 0.02 and 0.1%.

54. (New) The product of claim 51 wherein the reduced transition metal content bran is blanched to inactivate catalase and peroxidase enzymatic systems.

55. (New) The product of claim 54 wherein the reduced transition metal content bran is blanched at a temperature of between about 75 to 85 °C for about three (3) to ten (10) minutes, further wherein the residual enzyme activity after blanching is below about 10 CIU/g bran.

56. (New) The product of claim 51 wherein the bleached bran product is treated with catalase to remove residual hydrogen peroxide

Ab

57. (New) The product of claim 56 wherein between about 0.1 and 0.4% of catalase, by weight, is added to the bleached bran product at a temperature of about 60 °C, further wherein the hydrogen peroxide concentration is reduced to less than about five (5) PPM following catalase treatment.

58. (New) A bleached bran product comprising bran derived from a cereal grain, the bran bleached with ozone or paracetic acid in the presence of heat to produce the bleached bran product.

59. (New) The product of claim 58 wherein the bran is bleached using a combination of hydrogen peroxide and ozone treatments.